Morro Bay Energy Storage Opportunity

March 20, 2024: Community Presentation

Tonight's Meeting Purpose

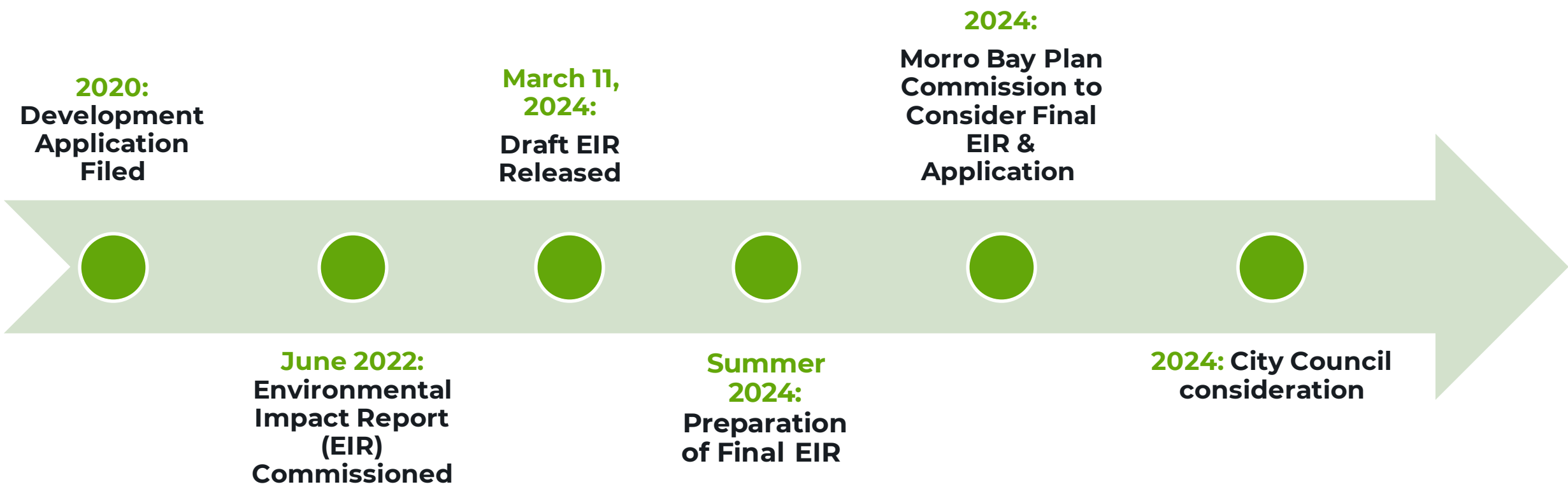
1) **Update on where we are in the permitting and review process (5 mins)**
    - Brad Watson – Vistra Sr. Director, Community Affairs

2) **Provide the community update (30 mins)**
    - Claudia Morrow – Vistra Sr. VP, Development
    - David Yeager – Vistra Director, Project Development

3) **Introduction of Offsite Consequences Analysis (25 mins)**
    - Dr. Shari Libicki – Chemical Engineer; Ramboll

4) **Listen and engage in dialogue – questions from floor and pre-submitted from morrobayenergystorage.com (1 hour)**
    - Moderated by Brad Watson

Current Status: Listen, Engage, & Follow Process in State Law



Claudia J. Morrow

Senior Vice President, Development

About Vistra Corp.

Vistra Corp. is a leading Fortune 500 integrated retail electricity and power generation company that provides essential power resources to customers, businesses, and communities across the United States.

For nearly 140 years, our company has adapted to changes in technology to ensure our plants and facilities safely and reliably produce electricity for the benefit of society.

Vistra is the **largest competitive power generator in the country,** with 41,000 megawatts (MW) of installed generation capacity.

The company is a **leader in the energy transition and expansion**, operating a variety of energy assets including:

- Four nuclear generation facilities totaling more than 6,400 MW of capacity
- The second-largest network energy storage capacity in the country with ~1,020 MW
- A growing portfolio of solar power plants
- A fleet of traditional power plants

Concerns About Reliability Exist Across U.S.

POWER

Is America's Electric Grid Equipped for the Electrification of Everything?

yahoo!finance

Two-thirds of the U.S. is at risk of power outages this summer—but it's not stopping Americans from electrifying everything in their homes

THE TRIBUNE

Will rolling blackouts hit SLO County? 'Yes, it is possible,' PG&E says

THE TRIBUNE

California avoided rolling blackouts for two decades. What went wrong on the grid?

CBS NEWS

Can the US rely on the electric grid? Some lawmakers say time is running out

FOX BUSINESS

Clean tech, AI boom straining US energy supply

Grid Operators Raise Reliability Concerns

NERC
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

*"Retiring conventional generation is being replaced with large amounts of wind and solar; **planning considerations must adapt** with more attention to essential reliability services"*

- NERC 2022 LTRA

California ISO

*"The **growing storage capacity is critical in** decarbonizing the bulk power system and to **our ability to keep the power flowing** as California transitions to a carbon-free system."*

- CAISO, July 2023

pjm®

*"The projected total capacity from generating resources **would not meet projected peak loads**...The amount of generation retirements appears to be more certain than the timely arrival of replacement generation resources..."*

- Energy Transition in PJM

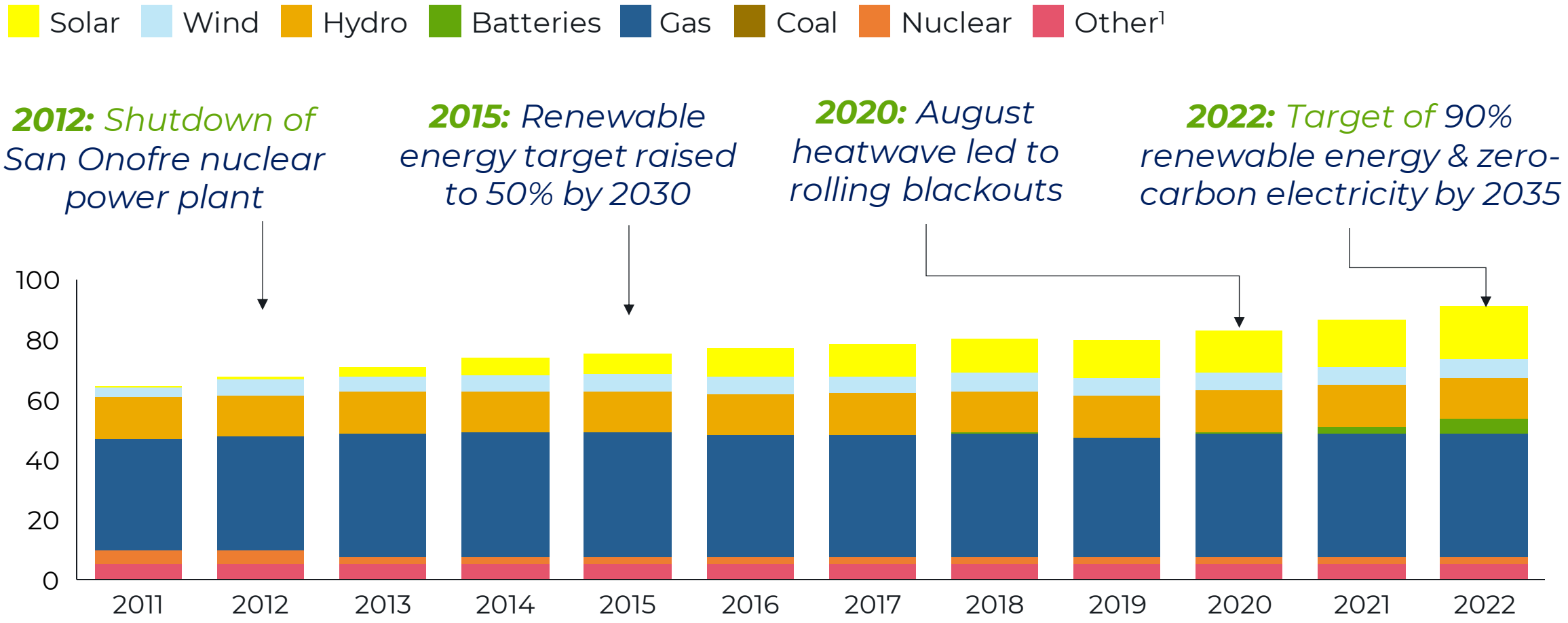
ercot
Your Power. Our Promise.

*"Data shows for the first time that peak demand this summer will exceed the amount we can generate from on-demand dispatchable power...There is **no longer enough dispatchable generation to meet the demand** of the ERCOT system"*

- Former PUCT Chairman Peter Lake, May 2023

The Rapid Change of California's Generation Capacity

***California installed capacity 2011-2022**, GW*

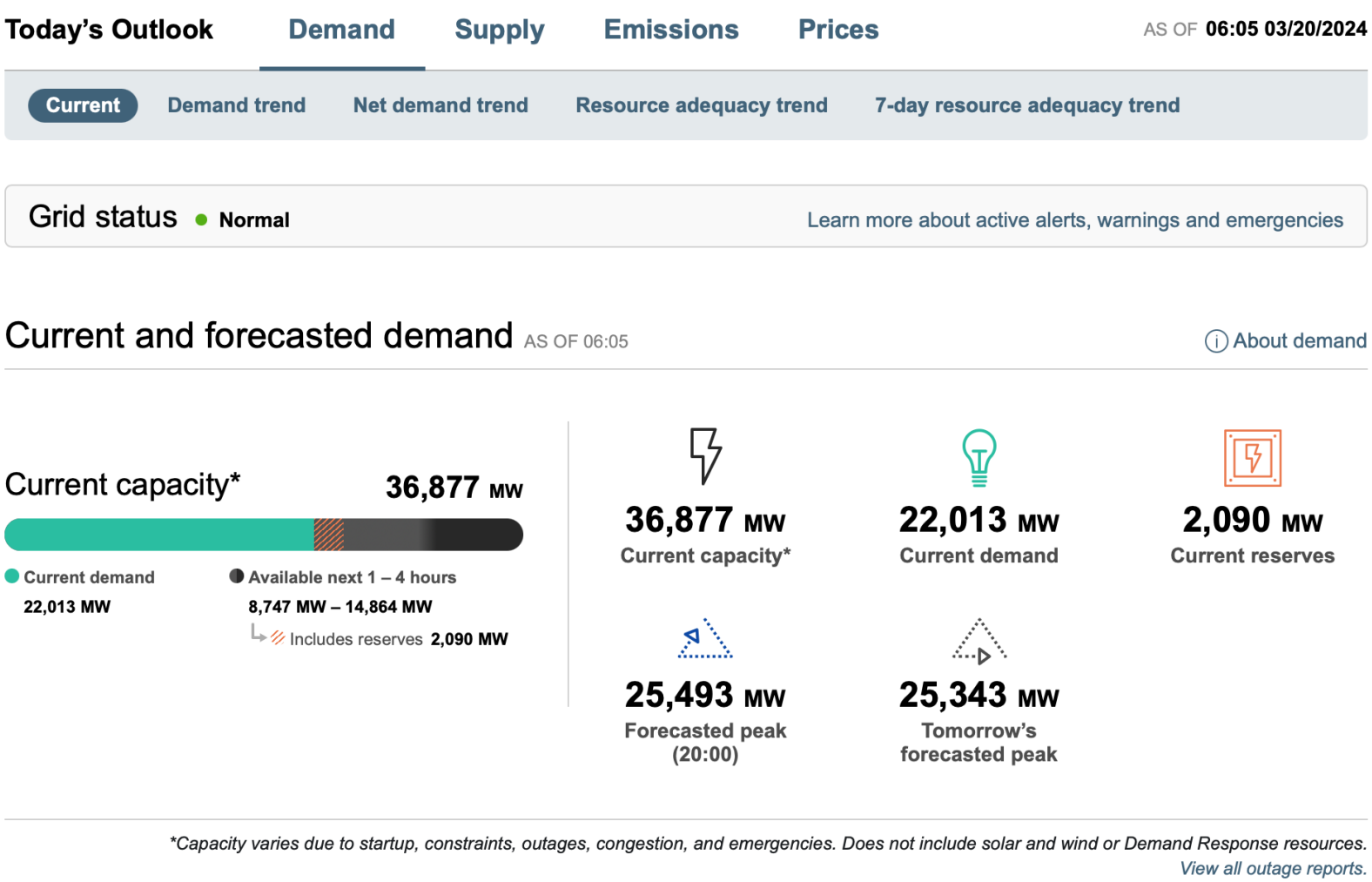


1. Includes biomass, geothermal, oil, w aste heat and petroleum coke

Source: EIA, Press Search

Typical Spring Day: Snapshot

Current and forecasted demand for March 20, 2024



*Peak demand forecast** = *~25.5 GW at 8 p.m./12:00*

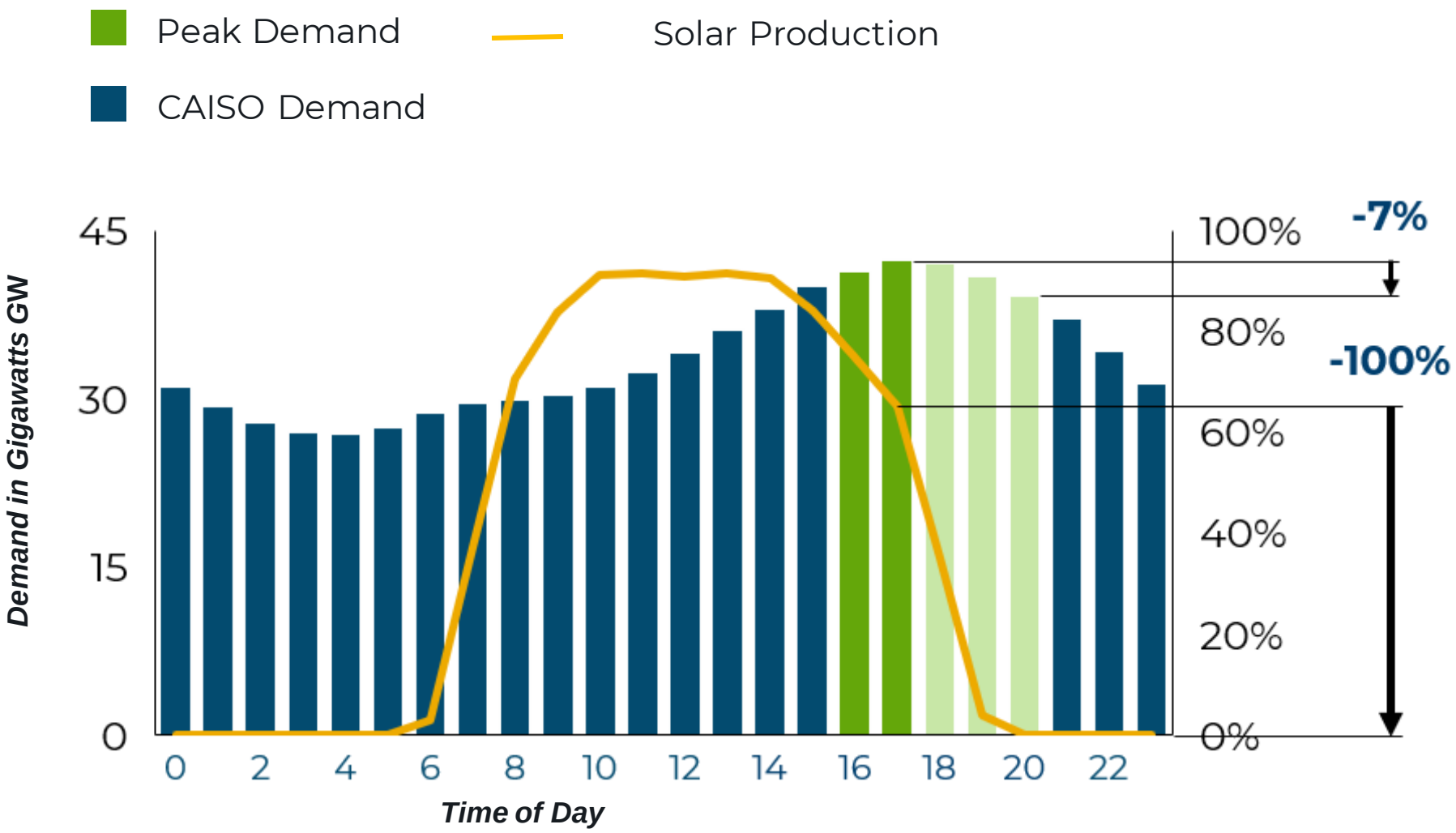
As of 6:05 03/20/2024

Source: CAISO

Typical Summer Day: Snapshot

Increase in solar has brought shift of scarcity period

Electricity Demand vs. Solar Production - August 17, 2023



Peak demand = 42.5 GW at 6 p.m./18:00

3 hours after the system peak, demand drops by 7%

solar output drops by almost 100%

Source: CAISO

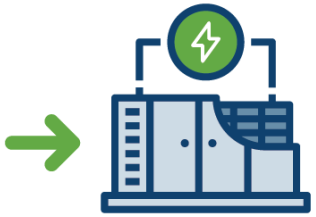
Energy Storage Is A Solution To Reliability Concerns

HOW IT WORKS:

GENERATION EXCEEDS DEMAND

ENERGY IN

CAPTURE RATHER THAN WASTE ZERO-CARBON RESOURCES



ENERGY STORAGE FACILITY

ENERGY STORED

BATTERIES STORE EXCESS RENEWABLE ENERGY UNTIL IT IS NEEDED

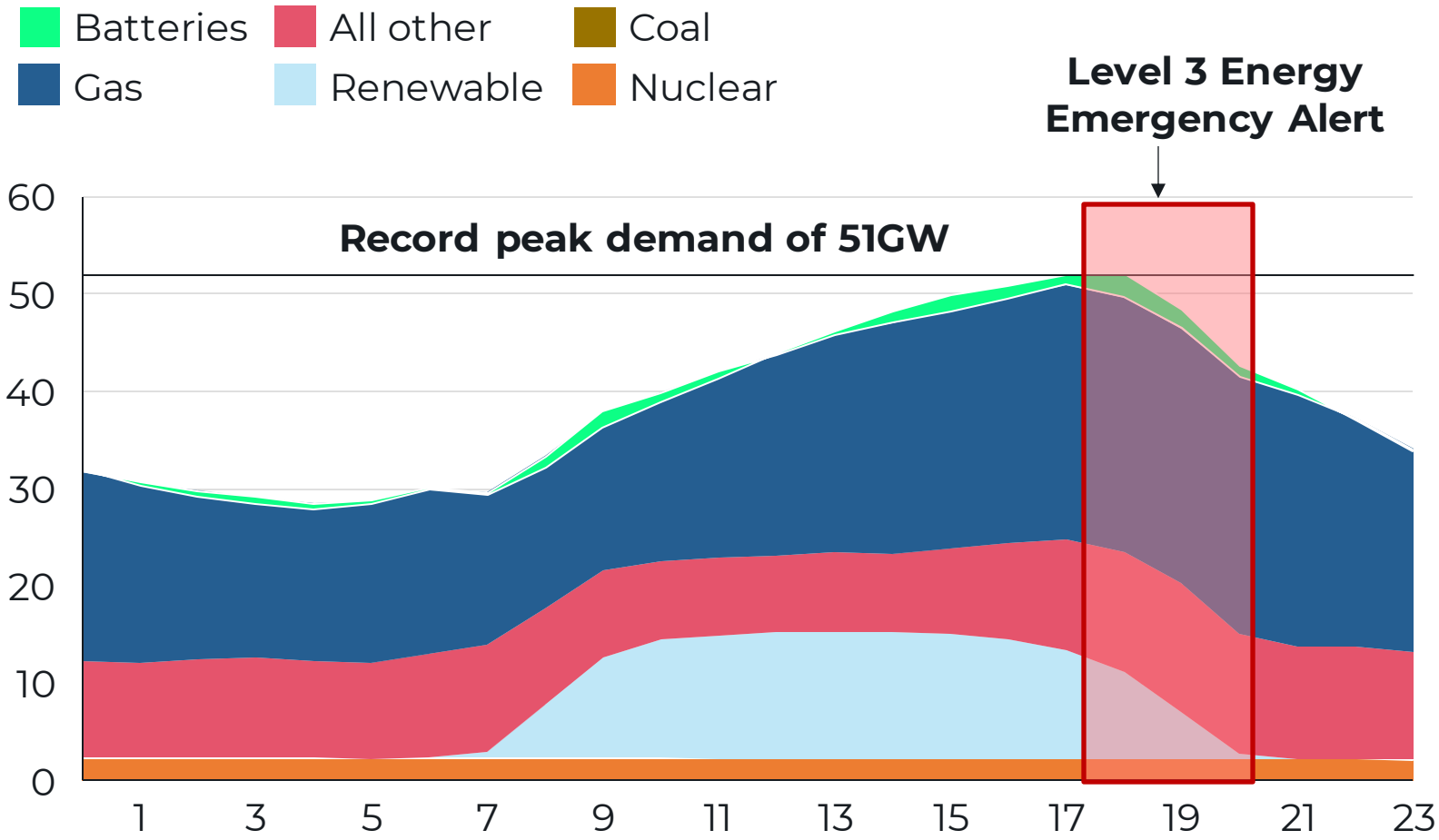
CONNECTED TO GRID

ENERGY OUT

FACILITY RELEASES ENERGY DURING PERIODS OF PEAK DEMAND

Extreme Condition: Batteries helped to avoid rolling blackout in California during 2022 heat wave

CAISO hourly generation by technology on Sept. 6, 2022, GW

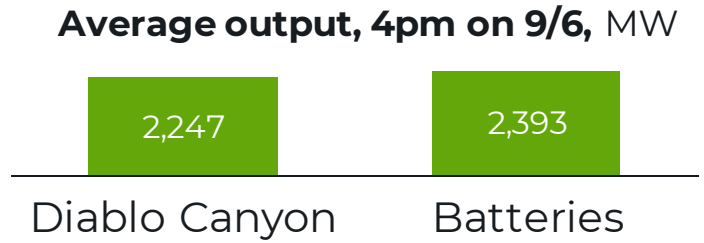


On Sept. 6, 2022

extreme heat caused record demand

& an emergency alert issued

At 4 pm, ***batteries provided more power*** *than Diablo Canyon nuclear plant, the state's largest generator*



Source: CAISO

Vistra Is An Experienced Developer & Operator

Reliable access to electricity is essential for your energy security. Given the crucial role storage will play in the stability and reliability of our nation's energy grid going forward, the field is rapidly evolving.

Commercially available products, technologies, and chemistries have evolved since Vistra's first energy storage project in 2018.

» Upton, TX - 2018

» Moss Landing, CA – 2020; 2021; 2023
Phases 1-3 Complete

» DeCordova, TX - 2022

An Experienced Redeveloper of Power Plant Sites

» Across America, power plants are closing as part of the energy transition.

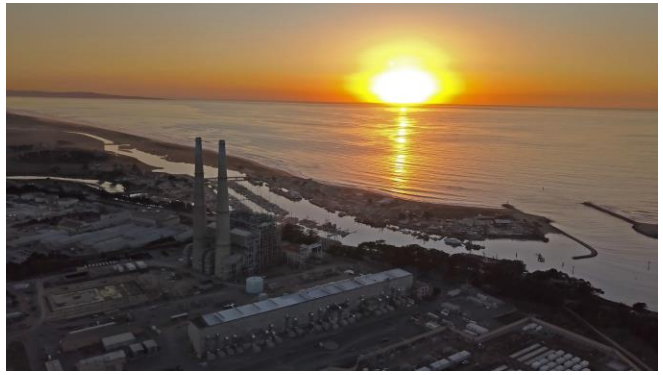
» Rather than retire and demolish expensive on-site transmission and utility infrastructure, Vistra believes in deploying new technologies to give power plant sites new use.

» Reusing land that has historically been used for power generation:

- Is good for the the environment by reusing existing materials & equipment
- Contributes to the stability of the grid
- Avoids need for new ratepayer-funded transmission equipment
- Rebuilds the property tax base to fund local services & infrastructure

» Each site is unique and must be evaluated individually.

An Experienced Redeveloper of Power Plant Sites



» Moss Landing gas plant – three of five phases of energy storage complete

» DeCordova gas peaker plant retrofitted with energy storage

ILLINOIS COAL TO SOLAR & Energy Storage + RETIRE & Renew initiatives

» Converting fleet of 9 legacy coal power plant sites to renewable energy centers, including deploying solar + storage technologies

Why We Are Here: Goals For Renewing & Redeveloping Site

Our goals for the site:

1. **Put Ratepayers First by Reusing a Portion of the Site & Existing Infrastructure to Improve Grid Reliability & Stability**

2. **Responsibly Demolish & Remediate the Legacy Power Plant to Provide Opportunity for Future Redevelopment**

3. **Use this Opportunity to Improve the Embarcadero & Harbor-Front for Future Generations**

David Yeager

Director, Project Development

Reusing the Morro Bay Power Plant: A Three Part Project

» **Put Ratepayers First:** Reuse of ~24 of the 107-acre site to build energy storage facility and connect to existing transmission and utility infrastructure.

» **Responsibly Demolish & Remediate Site:** Vistra to remove retired plant and stacks to make remaining private property development-ready.

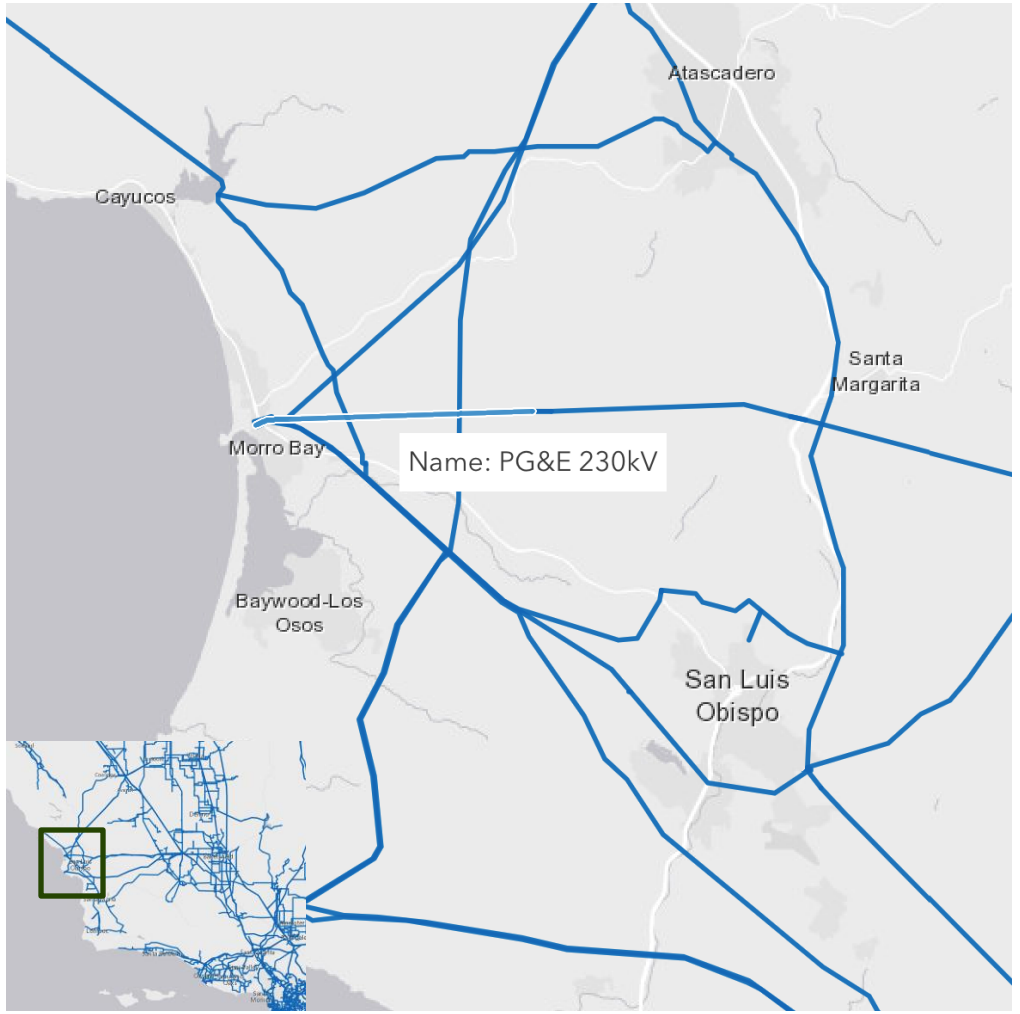
» **Improve Embarcadero & Harbor Front Property For Future Generations:** Adopt master plan to guide future development of remaining privately-owned land.

Why Morro Bay & Not Somewhere Else

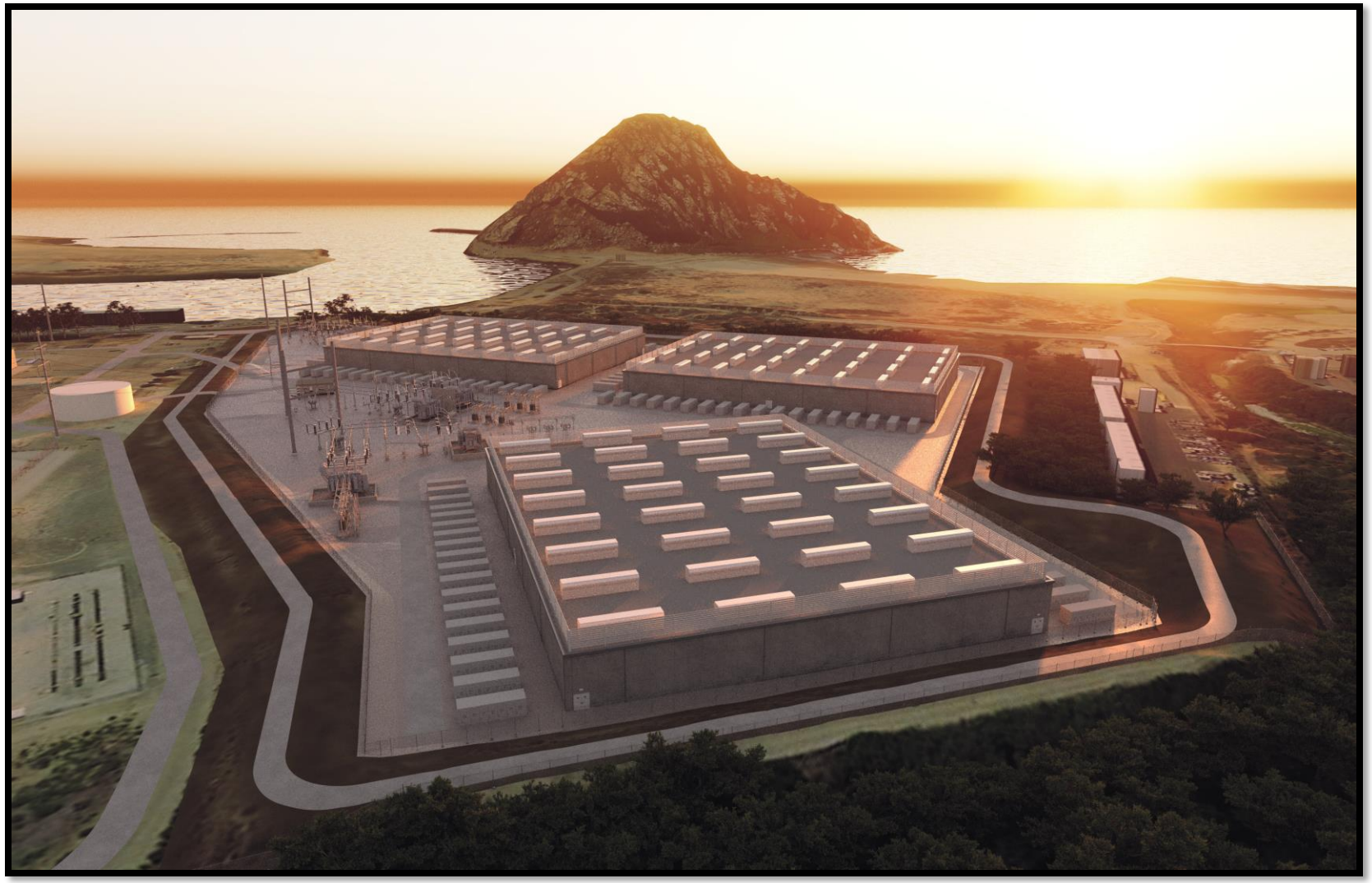
» **Coastal Transmission Highway:** For decades, the Morro Bay plant site and the San Luis Obispo region have been home to generation assets and interconnection points for the state's energy grid.

» **It's Already Built:** There are several high-capacity transmission lines, switchyards and substations in the region. Energy storage assets must be built and operated at critical points along the grid.

» **It's Underutilized:** The preexisting regional utility infrastructure that ratepayers paid to develop and maintain over decades makes the Morro Bay plant site ideal to help solve the region's energy security challenges.



Energy Storage Facility As Submitted Dec. 2020



Energy Storage Facility Alternatives – Draft EIR

» **Exploring Alternatives:** Since our submittal in 2020, the energy storage industry and our company's standards and preferences have evolved.

» **Commercially Available Products Evolving:** A revised layout of the energy storage center provides opportunity to look at current storage products & chemistry.

» **No Decisions on Battery Technology, Chemistry, or Provider Have Been Made:** The proposal is Lithium Ion and there are two primary types – NMC, LFP. While still under evaluation, we will use the best available technology.

Energy Storage Facility Alternatives – Draft EIR

» **Exploring Alternatives:** Each plant site is unique and Vistra is committed to finding the right solution for Morro Bay.

» **Aesthetically Different To Honor Views of Morro Bay:** The original 2020 plan envisioned an enclosed storage center, the Draft EIR evaluated container alternatives.

» **Existing Berm Taller Than Containers:** The container layout would have an approximate height of 15', lower than the existing 33' berm that has native landscaping.

Energy Storage Containers: A Proven Operation

» There is no higher priority at Vistra than the safe operations of our power plants.

» The company is an experienced developer and operator of power plants of every fuel source and size.

» Vistra's Energy Storage facilities are planned around the company's three safety principles:

- Prevention
- Detection
- Mitigation

Energy Storage – What Vistra Has Learned

» **Moss Landing 2021 Incident:** Enhancements to water-based heat suppression system after failures of small number of couplings on flexible hoses improperly sprayed water on batteries.

» **Contribute to Knowledge & Regulatory Environment:** Vistra supported and encouraged the adoption California's new law regulating and establishing safety standards for energy storage facilities.

» **Continuous Improvement to Reduce Risk:** Manufacturers and operators rapidly investing in new technologies and chemistries to reduce operational risks and improve reliability.

Summary of Impacts and Mitigation Measures

The City of Morro Bay has completed the Draft Environmental Impact Report (EIR) for the proposed Morro Bay Battery Energy Storage System Project.

The Draft EIR found several environmental impacts to be less than significant with mitigation incorporated, or less than significant impacts without the need for mitigation.

The Draft EIR found the following environmental factor to be significant and unavoidable: historical resources (*demolition of buildings and structures*).

Source: Notice of Availability For A Draft Environmental Impact Report - https://www.morrobayca.gov/DocumentCenter/View/19079/NOA-Morro-Bay-BESS--Draft-EIR

Dr. Shari Libicki

Chemical Engineer, Ramboll

Morro Bay Energy Storage Opportunity

Community Question & Answer